AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application;

Claim 1. (Currently Amended) A signal processing apparatus comprising:

analog filter means for performing band limitation of a reproduction signal having non-linear distortion~~,~~ and for performing analog equalization thereof;

first adaptive equalizing filter means for equalizing a linear signal of a filter output of the analog filter ~~mans~~ means; and

second adaptive equalizing filter means connected in parallel with the first adaptive equalizing means ~~in order to correct~~ for correcting non-linear distortion ~~that~~ in the filter output of the analog filter means ~~has~~.

Claim 2. (Currently Amended) The signal processing apparatus as set forth in claim 1, further comprising:

phase interpolation means for performing interpolation of phase based on ~~the basis of~~ a filter output of the first adaptive equalizing filter means and

a filter output of the second adaptive equalizing filter means; and

phase locked loop means for synchronizing a phase of the phase interpolation ~~mans~~ means based on ~~the basis of~~ an interpolated output fed back from the phase ~~compensation~~ interpolation means.

Claim 3. (Currently Amended) The signal processing apparatus as set forth in claim 2, wherein the second adaptive filter ~~is~~ comprises a Volterra filter.

Claim 4. (Currently Amended) The signal processing apparatus as set forth in claim 2, further comprising,

Viterbi detecting means for detecting an error rate of the interpolated output fed back from the phase interpolation means to generate a feedback signal ~~to be delivered~~ fed to the first adaptive equalizing filter means and the second adaptive equalizing filter means.

Claim 5. (Currently Amended) A signal processing method comprising:

an analog filter step for performing band limitation of a reproduction signal having non-linear distortion~~,~~ and for performing analog equalization thereof;

a first adaptive equalizing filter step for equalizing a linear signal of a filter output of the analog filter step; and

a second adaptive equalizing filter step executed in parallel to the first adaptive equalizing filter step ~~in order to correct~~ for correcting non-linear distortion ~~that~~ in the filter output of the analog filter step ~~has~~.

Claim 6 (Currently Amended) The signal processing method as set forth in claim 5, further comprising:

a phase interpolation step for performing interpolation of phase based on ~~the basis of~~ a filter output of the first adaptive equalizing filter step and a filter output of the second adaptive equalizing filter ~~means~~ step; and

a phase locked loop step for synchronizing a phase of the phase interpolation step based on ~~the basis of~~ an interpolated output fed back from the phase interpolation step.

Claim 7. (Currently Amended) The signal processing method as set forth in claim 6, wherein the second adaptive equalizing filter ~~is~~ step uses a Volterra filter.

Claim 8. (Currently Amended) The signal processing method as set forth in claim 6, further comprising:

a Viterbi detection step for detecting an error rate of ~~an~~ the interpolated output obtained at the phase interpolation step to deliver a feedback signal ~~at~~ to the first adaptive equalizing filter step and the second adaptive equalizing filter step.